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The Founding and Development of Louvain-la-Neuve, the only new town in Belgium

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Abstract

The new university town of Louvain-la-Neuve originated from the 1968 decision of the French-speaking university to leave the old town of Louvain (Leuven in Dutch) and to acquire farmland south of Brussels in order to create a new town.

Its urban model was directly inspired by the town of Louvain with its mix of land uses, in contrast to the functionalist approach in which different land uses are kept separate. Uncertainty about future growth led to a linear form of development along a pedestrian spine and a string of small squares, to priority being given to access by public transport - thanks to the national railways' investment in a new sub-surface station - and to the collection of storm water into a reservoir, treated as a lake.

The pedestrian spine has been the backbone for the development of compact neighbourhoods on each sides and of a shopping mall directly linked to the railway station.

This contribution endeavours to show how these initial aims have been pursued over almost half a century and what are the present perspectives.

Keywords

Barras, Blondel, density, design, functionalist, Lemaire, Leuven, lake, Lechat, neighbourhood, spine, square, pedestrian, piazza, reservoir, platform, Roland, university, urban, urbanised, underground, water, Woitrin.

1 Introduction: location and land acquisition

Central Belgium is a highly urbanised area, Brussels being the centre of a metropolitan region which includes Antwerp, Ghent and a number of medium-sized cities, among others Louvain/Leuven (Figure 1). Most of these cities are within commuting distance of Brussels¹.

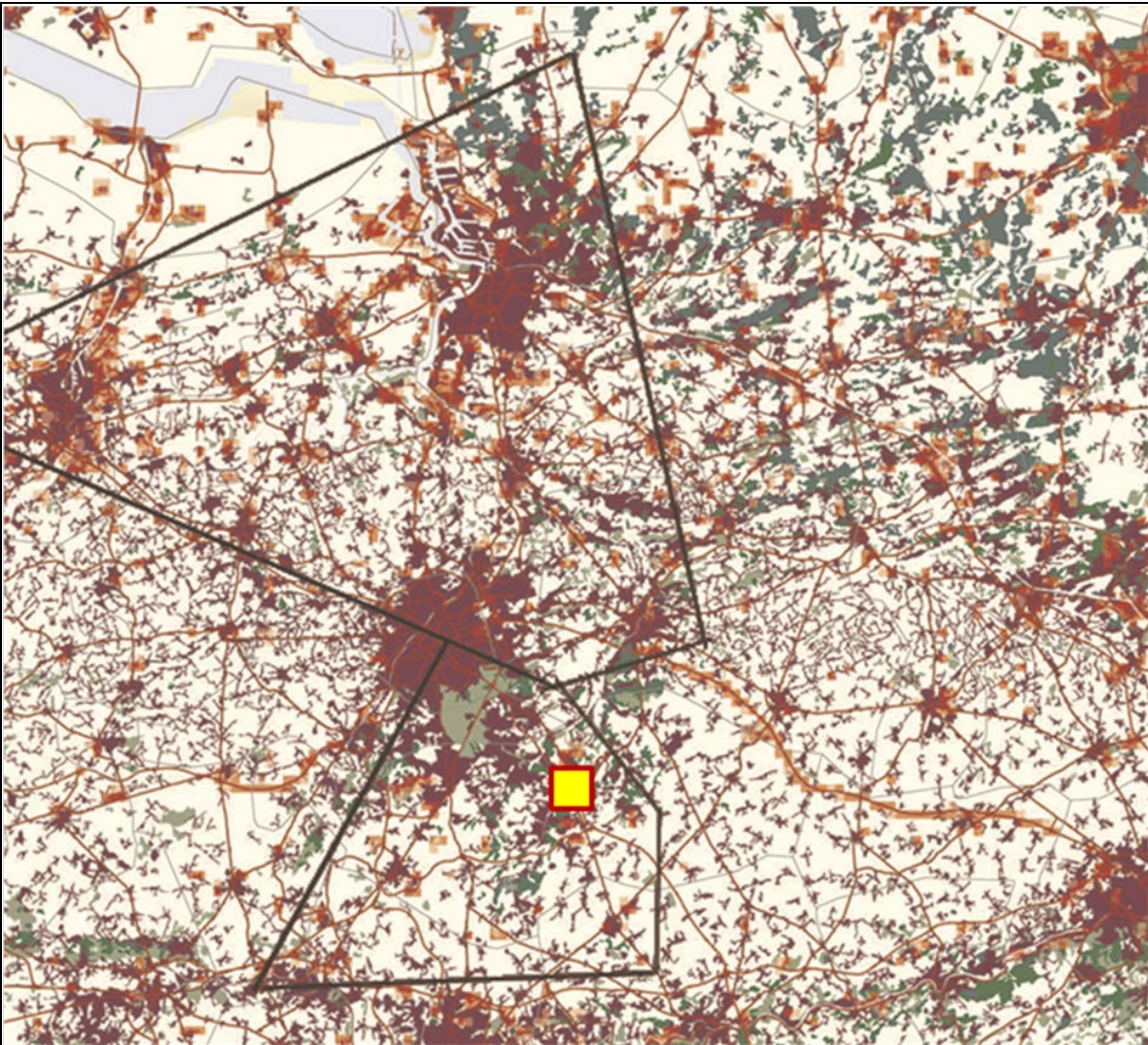


Figure 1 - Satellite map showing the urbanised area of central Belgium, around Brussels. Antwerp lies 50 km to the north, Ghent 60 km to the west and Louvain/Leuven 25 km to the east of central Brussels, in the Flemish region and form a kind of diamond. The loose conurbation south of Brussels forms a kind of triangle. The Louvain new town has been located (see yellow dot) in that part of the Walloon region, at some 30 km south of central Brussels.

The historic city of Louvain was the original seat of the Catholic University of Louvain (UCL), one of Europe's oldest (1425). Teaching was in French and Dutch, often by the same professors, until 1968, when the French-speaking university had to leave because it was located in the Dutch-speaking part of the country, in order to find a new location in the French-speaking part (Walloon region or bilingual Brussels). On the proposal of its general administrator Professor M. Woitrin, the university's board accepted an invitation from the small Walloon municipality of Ottignies (4,000 inhabitants) and its influential mayor Count du Monceau de Bergendal to settle at the edge of its territory, and did not choose one of the Brussels municipalities, where it owned land. That land was later to be used for the university hospital and the Faculty of medicine.

The UCL thus bought a tract of farming land some 30 km south-east of Brussels. Rather than building an isolated campus, as did many universities at that time, it decided to embrace the integrated physical model of Louvain/Leuven and other traditional university towns, making use of

the university's annual grants as equity. Only the central part of the UCL site was set aside for dense urban development. The forest land to the north was to be preserved (Figure 2).

Development of an entirely university-owned site by its owner was opposed by the Belgian government, which preferred an isolated campus such as that of Liège university², itself inspired by the post-war British and French new universities. It passed a special law (24 July 1969) forbidding universities to sell land acquired with subsidies to non-university users. UCL circumvented this law by granting long term leases (“emphyteose”) instead of selling freeholds.

Continuity of UCL ownership proved beneficial to implementing its planning policies as it ensured the landowner's ability to preserve its initial planning objectives in the long term³.

The leases were initially granted to individuals and small developers and contractors. In later phases larger tracts were leased, e.g. for the shopping mall and for mixed used developments.

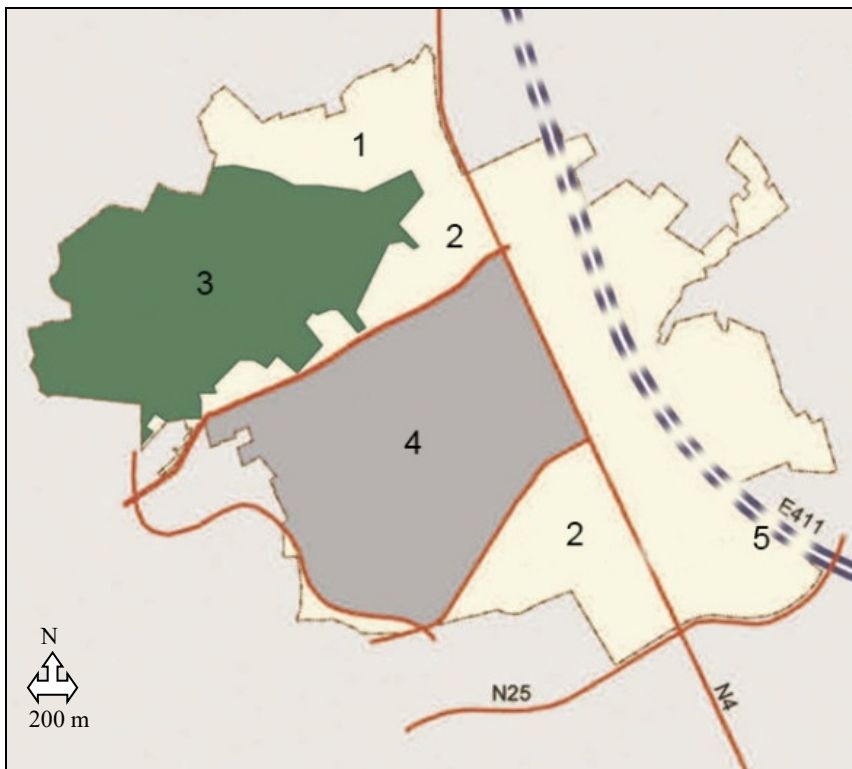


Figure 2 - The 920 ha of land acquired by the university in 1969. The map of university-owned land shows the anchoring of the new town on the only existing infrastructure, i.e. the N4 road linking Brussels to Namur and Luxemburg. The E411 motorway did not exist at that time and is shown by dotted lines. Dense mixed-use urban development was restricted to the central part of the site (4). The northern area in green was reserved as forest (3). The areas east and south of the dense urban development, and east of the N4 road, became a low density research and development park (2). The area north of the forest was developed as a golf course (1). The land beyond the motorway (5) remains undeveloped.

2 From the Victor Gruen Associates masterplan (1968) to that of the “Groupe Urbanisme Architecture” (1970)

Having opted for building a new town, the university board, on the proposal of its general administrator Prof. Woitrin, decided in the spring of 1968 to hire the established international planning firm Victor Gruen Associates (Los Angeles), a pioneer of American shopping malls, to draw up its masterplan. The Gruen plan, which was led by functional considerations, included a large central air-conditioned mall surmounted by high-rise buildings. All infrastructure had to be built before any part of the town could be brought into use, entailing a large up-front investment cost.

The Gruen masterplan was presented to the university board and the academic community in September 1968 and rejected by a large majority.

The university board then decided instead to entrust the planning and architectural coordination of the new town to an interdisciplinary design team recruited by the board itself. This team, called “Groupe Urbanisme-Architecture”, was jointly headed by a well-known specialist on historic towns (R. Lemaire), an architect-planner (J-P. Blondel) and an urban economist (P. Laconte). The seniority of R. Lemaire was recognised by the team. The new plan was adopted by the university board on 15 October 1970⁴ and has been the guideline for urban and university development ever since. Guideline means strong commitment by the University land owner to the pursue of the development along a linear East-West pedestrian spine mixing urban functions according to demand requirements. Within this framework each individual project must be approved individually.

The “Groupe urbanisme architecture” took its inspiration from university towns throughout Europe, and from the garden cities developed in Britain in the early 20th century (Letchworth and Welwyn Garden City). It relied on the millennial experience of successful multifunctional cities and neighbourhoods, rather than that of a few decades of functionalism with its spatial separation of functions, generating the need for motorised transport to link them.

In contrast with the Gruen masterplan the “Groupe Urbanisme Architecture” emphasized the human scale of buildings and public spaces, and respected the natural curves of the site and its central dry valley. A central linear pedestrian spine – a concept pioneered in England by the University of Lancaster⁵, visited by the author in 1968 – allows step-by-step development. Vehicle access to buildings and parking are located on each side of the spine, with occasional underpasses (Figure 3). Each phase of development included a mix of urban functions, allowing it to be brought into use immediately, unhindered by work on extensions. The total length of the spine is around 1,5 km, as illustrated by J. Remy⁶.

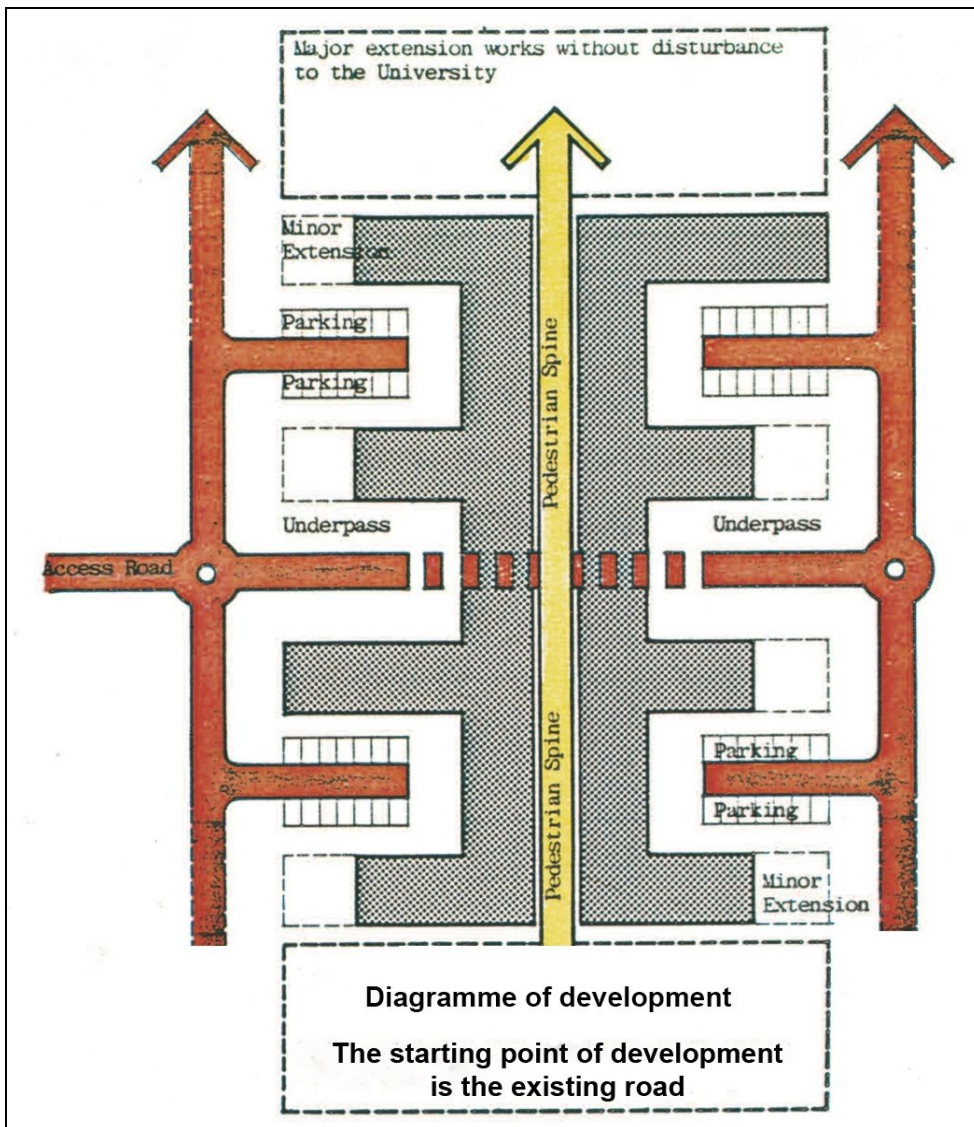


Figure 3 - Linear development along a pedestrian spine. This design allows the most flexible form of urban development (“stop and go”). In Louvain-la-Neuve the initial development started from an existing road and extended along the spine from east to west, an adaptation of the arrangement successfully devised by G. Epstein in 1964 for the University of Lancaster⁷.

This pedestrianised linear spine allowed savings to be made in land take and in the cost of initial road infrastructure investment. It mainly generated space for people to meet. Its length is limited to the space compatible with pedestrian accessibility (a radius of ca 600 m.)

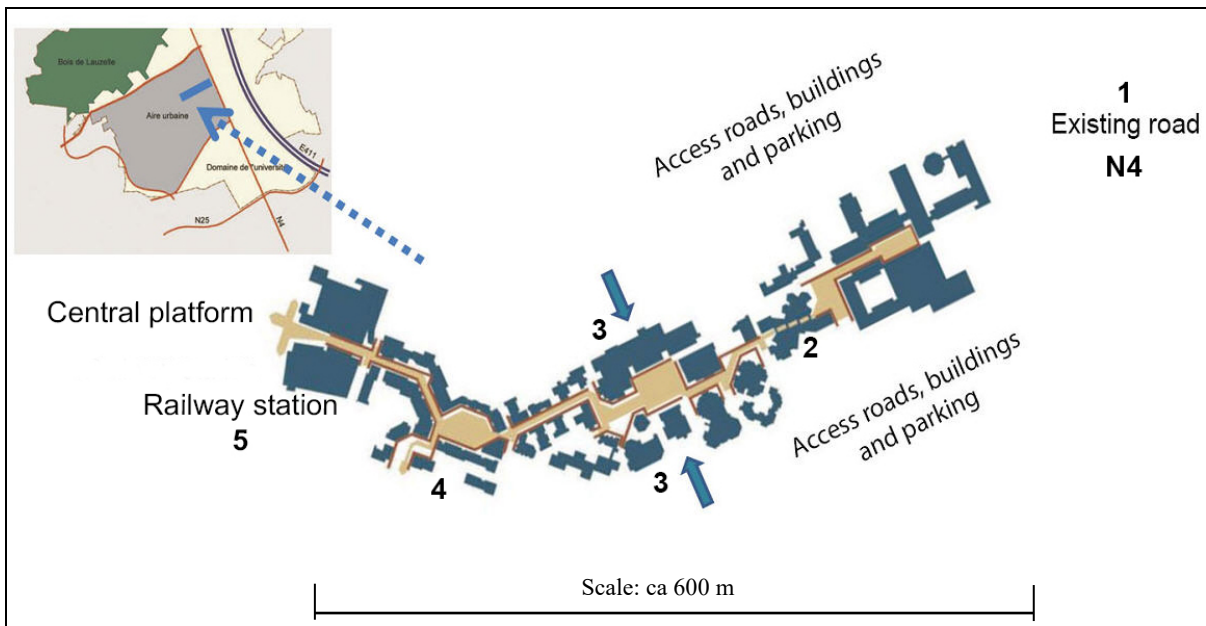


Figure 4 - The first phase pedestrian spine. The eastern starting point is the existing N4 road (1), followed by a string of public spaces and passages through buildings, indicated by dashes (2). The diagram shows the location of access roads and car parks. The arrows indicate the vehicle underpass and parking below the “Place des Sciences” (3). The public spaces have various shapes and the alignment of their street access is either perpendicular or tangential to that of the spine (4). The sub-surface railway station (5) marks the beginning of the underground platform (see figure 6).

The concept of a central pedestrian spine (Figure 3) was translated into the actual urban design as a string of public spaces, starting from the existing road to the east of the site (Figure 4). It came into being in 1972 in the eastern part of the site, and was soon extended to the railway station (opened in 1975) and from there to the future centre of the city and to the western part of the site⁸.

This string of spaces has been compared by P. Lombaerde to the string of piazzas in old Florence^{9 10}.

Car access to buildings, and parking, is located on each side the spine. Outdoor parking spaces were treated from the start as public gardens, planted with a range of tree species in order to attract a variety of birds, as a tribute to biodiversity (landscape architect: J-N. Capart). They have in practice become an ornithological reserve.

The centre of the first phase was the science library, an iconic concrete building seen as the cathedral of a university town, with its public square (“Place des Sciences”) built above a vehicle underpass. For some 45 years it has been a place for social contact, with university buildings, shops and restaurants conceived by the architect A. Jacquain of the architectural team Ateliers d’Architectes de Genval¹¹ (Figure 5).

In 2015 the same team was entrusted with a facelift of the string of public spaces west of the “Place des Sciences”, to be implemented by 2018. The science library will move to the central university site, and the present building is to be converted into a new museum of the university by 2017.



Figure 5.1 - The science library piazza (“Place des Sciences”). This concrete and wood piazza is the main gathering place in the first phase. It includes access to an underpass and to underground parking (photo by Koen Raeymaekers 2018).



Figure 5.2 – Place Rabelais, one of the multiple gathering spaces built on the slab (photo P. Laconte).



Figure 5.3 – View of the main square built on top of the underground parking (photo P. Laconte).

A new station was built by the State railway company SNCB/NMBS in 1975. The station provides a direct rail link to central Brussels in 35 minutes, and is to be expanded as part of Brussels' new fast commuter rail network¹². It is entirely below ground. Open air tracks are to be covered at a later stage. The full development of the spine included a central platform covering the lower part of the site. Besides the railway tracks it hosts access by car, underground public parking, delivery services and storage.

3. Planning organisation

Within the “Groupe Urbanisme-Architecture” R. Lemaire coordinated the work of the architects appointed to design the individual buildings and was the general manager of the team. J-P. Blondel undertook the daily management of the staff. P. Laconte managed the relations with the political and administrative authorities responsible for the project's rail (new station) and road infrastructure (subsidised local roads) and water management, using the public subsidies available for industrial parks. The expertise of the university faculties was made available to handle the legal issues and offer engineering knowhow related to the reservoir treated as a lake and the waste recycling issues.

The university administration's department for development and management (“Service de promotion et de gestion urbaine”) was in charge of implementing planning decisions, including inter alia the implementation of the platform, helped by favorable long term loans and bonds. Its coordination was undertaken by J-M. Lechat from 1974 till 1997. Relations with property developers have been managed since 1972 by the Institute for site development (INESU), headed by P. Barras since 2007. Both played a key role in attracting investors at the conditions set by the university board.

The small Ottignies municipality that hosted the UCL in 1968 has now become the City of Ottignies-Louvain-la-Neuve. The Louvain-la-Neuve part of it has 45,000 daytime occupants and 12,000 permanent residents. The city's total permanent resident population is 31,000. Citizen participation in the new town has been organised since 1971 by the council of residents, which became the association of Louvain-la-Neuve inhabitants in 1979. It actively advises on all projects on the university site.

Among others, it has been a critical participant in the process of adapting to larger scale projects, advising on the integration of the proposed new shopping mall and commercial street “L’Esplanade” into the urban fabric and on the large new housing project (“Courbevoie”) linked to the future enlargement of the railway station and the construction of a new multilevel parking structure (3,000 places), in addition to the sub-terranean parking space taken over by the “L’Esplanade” developer.

The association of inhabitants acts as a voice of the citizens but the final decisions are taken by the university and the city. Within the Association a key role was played by J.L. Roland, who has been since 2000 the very popular mayor of the City (see bibliography).

4. Property development along the pedestrian spine and the central platform

On each side of the long pedestrian spine and the central platform, mixed use neighbourhoods have been built by a large range of individual investors, following the 1970 masterplan. Among other things, the plan required the predominance of small plots (100 to 200 m², including terrace housing and small gardens) and low rise apartment buildings. These have proved very popular¹³ and have quickly attracted a diverse population.

As a result, from an early stage the resident population has included people attracted by the environmental quality and the cultural activities generated by the university, rather than simply university employees or resident students. Today¹⁴ most of the town’s 12,000 permanent residents are not connected with the university.

The new sub-surface railway station made it possible to develop a network of pedestrian streets while allowing car access and parking underneath. Figure 6 shows how the platform bridges the lowest part of the dry valley (ca 10 ha, i.e. ca 1% of the site). The space under the platform remains the property of the university, while the infrastructure and buildings are leased for up to 99 years.

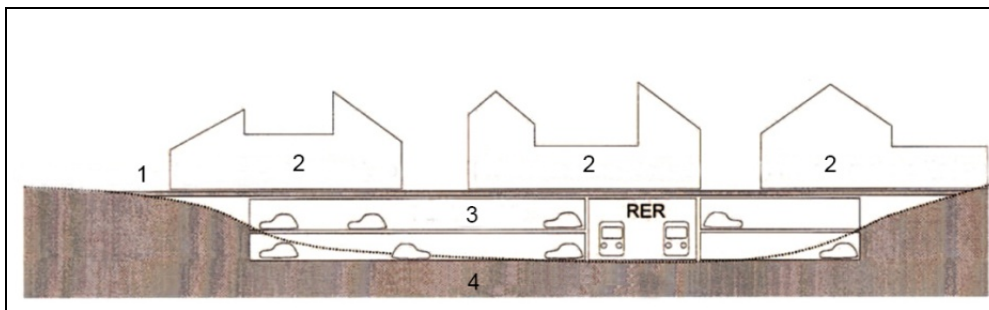


Figure 6 - Diagram of the platform. It is covered by offices and apartments, with shops on the ground floor (1) and a high density–low rise commercial street network that can be considered as “architectura minor” (standard architecture), in contrast with a few iconic buildings such as the railway station (see Figure 7), which are “architectura major”. The underground space was financed by the rail operator (3) by renting it as storage space, and by leases on the commercial space above it (2). No speculative high rise development was included in the masterplan. The ground below the platform remains the property of the university, as does the rest of the site (4).



Figure 7.1 - The arcaded entrance to the sub-surface railway station (architect: Y. Lepere) seen from the street level. The station is the point on the pedestrian spine where the natural ground seamlessly meets the artificial ground (i.e. the platform), as shown schematically in Figure 6.



Figure 7.2 – View of the open air tracks, to be expanded. This stations is to become the terminal station of the Brussels Suburban Line 9 and potentially covered.

Streets are narrow and mostly canopied to save space as well as to protect pedestrians from rain and sun. Plots are kept small whenever possible, to allow architectural diversity and to facilitate access to the university's building market by small contractors. Whenever feasible, courtyards are open passages for easier access to buildings and open space. High-density low-rise buildings with interlocking courts and piazzas replicate the gathering places and colleges of traditional university towns¹⁵. The platform hosts numerous public spaces, large and small, planted with trees. Shops,

cafés and restaurants adjoin these, while vehicle access, deliveries and parking are exclusively located underground.

The contribution of developers to the cost of the platform and its extensions has led to increasing the size of the plots. Some on-going mixed use developments initiated by large developers – containing flats, shops and a hotel - at the edge of the platform (“Agora”) and next to the railway station (“Courbevoie”) are presently (2016) being offered for sale^{16 17}. But the human-scale character of the town centre, in line with the 1970 masterplan, as defended by the present inhabitants, is in potential conflict with the financial interests of the university landowner and private developers eager to capitalise on the Louvain quality of life¹⁸.

The Louvain platform proved a successful magnet for private investment. From the start it benefited from the new sub-surface railway access and was supported by a growing group of users - the staff and students of the university and the inhabitants.

By contrast, Cumbernauld (Scotland) new town’s multilevel centre was built before the indispensable feeder population had materialised, entailing a large up-front investment cost.

A similar multilevel centre approach had also been tried on some post-war university campuses (such as the University of Essex, in England) and in other new towns all over Europe. It has been considered by many to be disappointing. Fifty years after its inauguration, the Essex campus inspired this comment: “An expansion of universities has not led to much enlightened architectural patronage. Rather the opposite, in fact. The (Essex) university visual trope remains those dogged dreaming spires”¹⁹.

As for Cumbernauld, it has been described as follows²⁰: “The intended core of Cumbernauld remains the town centre buildings, all of which are essentially contained within one structure, segmented into “phases”, the first of which was completed in 1967... Designed to be a commerce centre, an entertainment and business venue and a luxury accommodation site, it was widely accepted... Unfortunately, the town never developed to its planned size, and the town centre has never had the life envisaged. Wealthy occupiers for the centre’s penthouses never materialised and some now lie empty and derelict”.

Louvain-la-Neuve’s 1970 masterplan allowed changes of land use within the area accessible on foot. A major change occurred in 2005 when a 35,000 m² shopping and leisure mall (“L’Esplanade”), directly linked to the railway station and the platform, came into use. This private mall now has a patronage of 8 million visitors (2015) per year and is preparing nearly to double its size by using the airspace above the rail tracks. It has taken over the sub-terranean parking space.

The neighbourhoods developed in line with the university and the town’s growth, attracting cultural and entertainment facilities and a private museum devoted to Hergé, the creator of the character Tintin. This is also located along the spine, next to the railway station (architect: Atelier de Portzamparc).

The university’s science faculties have attracted science parks in various peripheral locations totalling 230 ha.

The railway station has been chosen by the Belgian State railways as the terminus of the south-east line of the new Brussels commuter rail system, including a new parking complex. This evolution will be challenging, as it will generate a daily influx of rail commuters coming by car from surrounding

municipalities and not related to the population of the new university town. A residential complex (“Courbevoie”) is, however, to be built above the new parking provided for the railway users²¹. This is currently a source of tension between the university, the inhabitants and the city.

4 Water management

A key feature of the planning of Louvain-la-Neuve is the conservation of the Ottignies plateau’s water resources. A dual water collection system has been installed in many buildings. Only waste water goes to the treatment plant. Storm water is collected into an artificial lake that serves both as a reservoir and an amenity. The water level varies according to the amount of rain.

Pre-monitoring of water entering the lake and adding oxygen allows the water quality for fish to be maintained²². This water saving policy has become more pertinent than ever at a time of increased resource awareness.

The collection of storm water into reservoirs treated as lakes with variable water levels has been adopted in a number of cities in neighbouring countries, e.g. at Billancourt, near Paris. Its large linear park (Trapeze) is inundated in the rainy season and becomes a lake²³.

In monsoon areas this land-water interface has been successfully applied as a natural way to absorb heavy rain and avoid floods, e.g. in Binshan-Ang Park in Singapore²⁴. The celebrated Dujiangyan ecological anti-flood scheme in Sichuan (256 BC) drew upon the same water management philosophy²⁵.

In addition the lake has acted as a magnet to residential development close to both the central platform and the surrounding parkland^{26 27}.



Figure 8 – View of the reservoir, treated as a lake.

Evaluation: achievements and challenges

The *achievements* emerging from its 45 years of implementation may be summarised as follows.

- From its first phase (1972) the masterplan achieved a mix of land uses. Each phase could stand alone but was linked to the following ones, all of which were located along a pedestrian spine that started in the east on the existing main road and extended for nearly two km through the whole site, saving road infrastructure costs and generating a maximum number of informal meeting places. This feature proved the main attraction for both residential and commercial development. The preference for small plots generated in-built architectural diversity.
- The central part of the spine was developed above a new sub-surface railway station built in 1975 and directly connected to Brussels. This feature allowed two-way commuting. The underground space also hosted access roads, parking and room for storage, while the surface was reserved for pedestrian spaces, shops and cultural investments, attracting more residents. A 35,000 m² regional shopping mall, also linked to the railway station and mixed with residential development, opened in 2005, next to the station, while it could have been located in the neighboring country side. This new development also included a new residential and commercial street (rue Charlemagne) and the management of the entire underground parking space. It currently (2015) has 8 million visitors per year, and will be expanded. This new development has been a key asset for further development of the new town.
- The station itself will become the terminus of one of the new Brussels commuter lines, generating another boost to the town. Close to the station the Hergé museum is attracting younger visitors.
- All storm water was channelled towards the lowest part of the site, a reservoir treated as a lake, which meant a strong saving as compared with the all in one sewage. The lake became another attraction to residential development unrelated to the university.
- From the start the new inhabitants and temporary residents, mainly students, organised themselves into a strong association of inhabitants, a countervailing power to the university land-owner and private investors, as well as to the municipality of Ottignies, which meanwhile has become the city of Ottignies-Louvain-la-Neuve. The inhabitants were fully involved in the negotiations about the 2005 shopping mall. This involvement embodied the will of all stakeholders to make success of what had been an imposed move.
- The industrial research park has been developed outside the residential area on 230 ha including the 10 ha China-Belgium Technology Center (CBTC) under construction (2019).

What in the late sixties looked like a utopian project has turned into the fastest growing service centre in Belgium, enhancing the whole area. Among others, the many start-ups generated by university research now extend to the periphery of the university site and well beyond.

The originality of Louvain new university town was recognised by the award of the Abercrombie Prize for town-planning and territorial development by the International Union of Architects (UIA) in 1978.

Challenges are looming, however, and will have to be met during the coming years:

- The demand for residential development and the status symbol of the place have led to larger projects and higher prices which may threaten the social balance of the new town. The city and the university are joining forces to set up community land trusts which are in charge of acquiring and managing grouped flats and houses, thus without intermediary
- The planned transformation of the railway station into a large commuter terminal includes 3,000 parking spaces, creating a conflict between the needs of commuters and the aspirations of the association of inhabitants. This conflict may be partly alleviated by the construction of the new complex of flats (“Courbevoie”) above the parking structure. Moreover the connection between the railway station, operated by the State railways, and the bus system, operated by the Walloon region, could be improved.
- There is room for some higher density residential redevelopment of early streets (rue des Wallons, built in 1972) but the pedestrian environment (radius of 600 m.) imposed by the 1970 masterplan should not be jeopardised. In this context mention should be made of an attempt by the university board in 2009 to develop the land beyond the motorway - see Figure 2 (5). This would have been a clear violation of the new town’s masterplan and was promptly thwarted by the city council and its mayor.

Conclusion: Was the creation of a new town in the highly urbanised central Belgium necessary? Was it a success?

Looking back, the “raison d’être” for creating a new town from scratch can only be justified by reference to the Belgian conflict over the use of languages that led to the need to relocate the UCL from Louvain/Leuven to another site. The majority of the university’s board wanted to relocate in the French-speaking Walloon region, not in bilingual Brussels, although it owned land in the Brussels municipality of Woluwe St- Lambert, whose mayor was eager to host the whole university. In addition it did not want to locate in an existing smaller Walloon city. It thus accepted the pressing invitation of the small Ottignies municipality (4,000 inhabitants) and its influent mayor to locate at the edge of its territory.

Once these self-imposed constraints had been confirmed, the decision by the board to create either a new campus or a new town became rational. It opted for the new town, as proposed by its general administrator and appointed Victor Gruen Associates to make its masterplan. This masterplan was rejected by the university community.

The board then appointed the “Groupe urbanisme Architecture” to make a new masterplan and kept it as guideline from 1970 until now. This second masterplan consisted in an incremental pattern of development along a linear pedestrian axis, a high density-low rise urban design, many public spaces and a water resources saving management scheme. This urban design saved considerable initial infrastructure costs and proved attractive to both the university and outside stakeholders.

The agreement of the State railways to build a new station in 1975 was a welcome windfall that helped to attract a diverse population.

The 2005 private shopping mall, its new commercial street, adjacent to the station, and its taking over of the underground parking were a second welcome windfall.

From the start, the emergence of a pioneering residential community was a countervailing power to that of the university as landowner of the new town. The personality of J.L.Roland, mayor of the City since 2000, was a third welcome windfall.

The “Groupe Urbanisme architecture” human-scale design contributed from an early stage to a generally-recognised high quality of life and explained the growth of population not related to the

university. The town's overall success, helped by both the City and the site management administration, is widely recognised and was not affected by the 2008 property crisis. This very success has drawn a higher income population and the city, together with association of inhabitants and the university is presently taking steps to increase the proportion of affordable housing.

Paradoxically, the physical separation of the old and the new university did not prevent maintaining close relations between their faculties, what in turn generated attempts at rapprochement between the City of Louvain/Leuven and the City of Ottignies-Louvain-la-Neuve. They culminated in 2016 in an official twinning of the two cities, opening the way to future common projects, beyond the language separation.

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Disclosure Statement

No known conflict of interest arises. The author was director at the UCL from 1966 until 1984. The views expressed in the article are his own.

Note on author

P. Laconte has doctorates in Law and Economics (UCL). He was head of staff at the the Brabant government for the Brussels-Capital structure plan and planning appeals (1963-1966), director at the UCL (1966-1984), secretary general of the International Union of Public Transport – UITP, the voice and think tank of public transport and mobility (1984-1999), and a member (later vice-president) of the European Environment Agency's Scientific Council (2003-2011). His publications include "Water Resources and Land-use Planning: a systems approach", "Energy and Land-use: a systems approach", "Brussels: Perspectives on a European capital" (co-edited with Carola Hein) and several works about Louvain-la-Neuve (see references and bibliography).

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Image sources

- Figure 1:** Satellite map (Google Earth 2007) showing the urbanised area of central Belgium, around Brussels.
- Figure 2:** Drawing based on the cadastral map of land acquisitions by the University. Archives P Laconte.
- Figure 3:** Epstein, G, *Les nouvelles universités et le cas de Lancaster*, in Laconte, P (ed), *La recherche de la qualité environnementale et urbaine – Le cas de Louvain-la-Neuve – Belgique*. Lyon : Editions du CERTU, 2009.
- Figure 4:** Drawing made by the author, based on the initial masterplan. Archives P Laconte.
- Figure 5:** Photo taken by the author, 2005. Archives P Laconte.
- Figure 6:** Drawing by the author, based on the initial masterplan. Archives P Laconte.
- Figure 7:** Photo taken by the author, 2008. Archives P. Laconte. Used for the cover of *La recherche de la qualité environnementale et urbaine – Le cas de Louvain-la-Neuve – Belgique* (op cit).